AMENDMENTS TO THE CLAIMS

1. (previously presented) A method comprising

driving an amplifier in a predefined manner,

sensing a change in power delivered to a power input of the amplifier as a result of the predefined driving, and

determining a value indicative of which type of speaker or speakers are connected to an output of the amplifier, based on the sensed change in power.

2. (original) The method of claim 1 in which sensing the change in power comprises sensing a change in power delivered to a power input of an apparatus that includes the amplifier as a result of the predefined driving.

3. (original) The method of claim 1 in which sensing the change in power comprises sensing a change in power transmitted from a power supply supplying the amplifier as a result of the predefined driving.

4. (original) The method of claim 1 in which sensing the change in power comprises measuring a current.

5. (currently amended) The method of claim 1 in which determining the value comprises

comparing the sensed change to a plurality of stored changes, each stored change corresponding to an identified one of the ~~one or more~~ speaker or speakers; and

selecting a stored change closest to the sensed change.

6. (original) The method of claim 1 in which driving the amplifier in a predefined manner comprises applying a driving signal of known frequency and amplitude to the amplifier.

7. (original) The method of claim 1 in which driving the amplifier in a predefined manner comprises applying a driving signal with characteristics which prevent the amplifier output from causing an audible effect.

8. (original) The method of claim 1 in which determining a value comprises determining an impedance seen at the output of the amplifier.

9. (original) The method of claim 1 also including

comparing the determined value to an expected value for the one or more speakers.

10. (original) The method of claim 9 in which the expected value comprises an impedance of the one or more speakers.

11. (original) The method of claim 10 in which the expected value comprises an impedance of the one or more speakers operating at a frequency of a signal driving the amplifier.

12. (previously presented) The method of claim 1 in which the value is indicative of the types of_two speakers connected to the output of the amplifier.

13. (original) The method of claim 1 in which driving the amplifier in a predefined manner comprises applying at least one probing signal.

14. (original) The method of claim 13 in which two speakers are connected to the channel and more than one probing signal is used to drive the amplifier.

15. (original) The method of claim 13 in which the probing signal is selected to be outside a normal range of hearing.

16. (original) The method of claim 13 in which the probing signal is a single pulse comprising a shape that is selected to minimize an audible effect of energizing a drive coil of a DC-connected speaker.

17. (original) The method of claim 1 in which the change comprises an input supply current change of the amplifier.

18. (original) The method of claim 1 in which determining the value comprises performing noise rejection.

19. (original) The method of claim 18 in which performing noise rejection comprises performing noise rejection using synchronized demodulation.

20. (original) The method of claim 18 in which performing noise rejection comprises performing noise rejection using correlation analysis.

21. (previously presented) A system comprising

an amplifier having a speaker output, a drive signal input, and a power input, and

a circuit connected to:

sense a change in power delivered to the power input as a result of an input signal on the drive signal input, and

determine a value indicative of which type of speaker or speakers are connected to the speaker output based on the sensed change in power being drawn at the power input.

22. (original) The system of claim 21 also including

a current supply electrically connected to the power input of the amplifier.

23. (original) The system of claim 22 in which the circuit comprises an inductor across which a voltage measurement can be made, the inductor being electrically connected between the current supply and the power input of the amplifier.

24. (original) The system of claim 23 in which the inductor comprises a low resistance portion and a low inductance portion.

25. (original) The system of claim 22 in which the circuit comprises a resistive circuit board trace with two points between which a voltage drop can be measured, the resistive circuit board trace being electrically connected between the current supply and the power input of the amplifier.

26. (original) The system of claim 21 in which the circuit comprises a signal measurement module.

27. (original) The system of claim 21 in which the circuit detects the amount of power being drawn at the power input of the amplifier by sensing an amount of power transmitted from a power supply electrically connected to the power input of the amplifier.

28. (original) The system of claim 21 comprising:

an apparatus including the amplifier,

wherein the circuit detects the amount of power being drawn at the power input of the amplifier by sensing an amount of power drawn at a power input of the apparatus.

29. (original) The system of claim 28 wherein the amplifier is a first amplifier, the system comprising:

a second amplifier that is included in the apparatus, the first and second amplifiers each having one or more speaker outputs and being capable of being driven independently,

wherein the circuit is configured to sense an amount of power drawn at a power input of the apparatus while driving each amplifier independently, making it possible to diagnose output faults each output channel of each amplifier using the sensed power at the apparatus.

30. (previously presented) A computer program product, tangibly embodied in a data structure on a computer readable medium , for identifying a speaker, the computer program product comprising instructions operable to cause data processing apparatus to:

drive a channel of an amplifier with at least one probing signal;

receive a measurement signal indicative of a change to an input supply signal of the amplifier;

compare the change to an expected value; and

determine from the comparison a value indicative of a type of a speaker.

31. (original) The computer program product of claim 30, wherein the instructions are further operable to cause the data processing apparatus to define a predetermined frequency for the probing signal.

32. (previously presented) The computer program product of claim 31, wherein the instructions are further operable to cause the data processing apparatus to define the expected value using a stored impedance of the speaker operating at the predetermined frequency.

33. (previously presented) The computer program product of claim 31, wherein the instructions are further operable to cause the data processing apparatus to define the expected value using a stored impedance of a first speaker and a second speaker operating at the predetermined frequency, the first and the second speakers being electrically connected to the channel.

34 (previously presented) The system of claim 21 wherein:

the circuit generates the input signal at a selected frequency, and

the circuit determines the value indicative of the type of the speaker by:

computing an impedance at the speaker output when the speaker is operating at the selected frequency based on the sensed change in power,

comparing the computed impedance to a set of stored values, and

identifying a stored value corresponding to the measured impedance, the stored value identifying the type of speaker.

35. (previously presented) The system of claim 34 wherein:

the stored value comprises an impedance of the identified type of speaker as measured when operating at the selected frequency.

36. (previously presented) The system of claim 21 in which the circuit comprises a digital signal processor and a microcontroller.

37. (previously presented) The system of claim 34 in which the circuit identifies the stored value based on the proximity of the measured impedance to the stored value.

38. (previously presented) A system comprising

an amplifier having a speaker output, a drive signal input, and a power input, and

a circuit connected to:

sense a change in power delivered to the power input as a result of an input signal on the drive signal input, and

determine a value indicative of which of at least two speakers having different impedances is connected to the speaker output based on the sensed change in power being drawn at the power input.

39. (previously presented) The system of claim 38 in which the value indicative of which of the at least two speakers is connected comprises a signature impedance versus frequency curve.